CLAIMS

WHAT IS CLAIMED IS:

1. A monitor for a vehicle allowing oversight and detection of vehicular activity, comprising:

a first camera, said first camera directed towards a roadway upon which the vehicle is traveling, said first camera directed towards a first line painted on said roadway; and

a roadway detector, said roadway detector coupled to said first camera and receiving signals from said first camera, said roadway detector detecting signals from said first camera indicating presence of said first line.

2. The monitor of Claim 1, further comprising:

a recorder, said recorder coupled to said first camera and recording signals transmitted by said camera; whereby

activity of the vehicle on said roadway is detected and recorded for present and future review and analysis.

3. The monitor of Claim 2, further comprising:

said recorder being capable of preserving said camera signals despite a collision, accident, or similar catastrophe.

4. The monitor of Claim 2, further comprising:

an indicator, said indicator coupled to said roadway detector, said indicator indicating disposition of said vehicle upon said roadway relative to said first line.

5. The monitor of Claim 4 wherein said indicator indicates deviation of the vehicle from a fixed distance relative to said first line.

6 The monitor of Claim 5 wherein said fixed distance is set by the driver.

7. The monitor of Claim 4 wherein said indicator indicates change in position from a previous position relative to said first line.

8. The monitor of Claim 7 wherein said indicator indicates that the driver is weaving when constant change in position is detected.

9. The monitor of Claim 5, further comprising:

said indicator issuing a warning when the vehicle departs from a path defined by said first line.

10. The monitor of Claim 9 wherein said warning is selected from a group comprising light, sound, vibration, mist, wind, heat, cold air, scent, or a combination thereof.

11. The monitor of Claim 9 wherein the driver of the vehicle may set a threshold value for the amount that the vehicle departs from said path for said indicator to issue said warning.

12. The monitor of Claim 9 wherein said warning is issued when either the vehicle departs from a position having a fixed distance from said first line, when the vehicle constantly changes its position from a previous position relative to said line, when a long term pattern of steering errors is detected, when long term non-movement of the vehicle's steering wheel is detected, when the vehicle's traveling on the rumble bars of said roadway is detected, or a combination thereof.

13. The monitor of Claim 2, further comprising:

a second camera, said second camera directed towards said roadway and directed towards a second line painted on said roadway; said first line being on one side of the vehicle and said second line being on an opposite side of said vehicle, said vehicle travelling between said first and second lines;

said second camera coupled to said roadway detector, said roadway detector receiving signals from said second camera and detecting signals from said second camera indicating presence of said second line; whereby

coordinated detection of said first and second lines by said roadway detector indicates disposition of the vehicle between said first and second lines and proper travel of the vehicle along said roadway between said first and

second lines.

14. The monitor of Claim 13, further comprising:

an indicator, said indicator coupled to said roadway detector, said indicator indicating disposition of said vehicle upon said roadway relative to said first and second lines.

15. The monitor of Claim 14 wherein said indicator indicates deviations of the vehicle from a center position between said first and second lines.

16. The monitor of Claim 14, further comprising:

said indicator issuing a warning when the vehicle departs from a path defined by said first and second lines.

17. The monitor of Claim 2, further comprising:

a light source, said light source illuminating said roadway before said first camera; whereby

said roadway, including said first line, are better detected by said first camera.

18. The monitor of Claim 17, further comprising:

said light source transmitting light of a certain character;

said first camera detecting light of said certain character; whereby said light source may selectively illuminate said roadway for said first camera by light of said certain character and allowing said first camera to specifically concentrate on said light of certain character and ignore light not having said certain character.

19. The monitor of Claim 18 wherein said certain character of light is infrared.

20. The monitor of Claim 2, further comprising:

said roadway detector determining centroids of signals received from said first camera, said centroids indicating presence and relative location of said first line.

21. The monitor of Claim 2, further comprising:

said roadway detector coupled to a turn indicator, said roadway detector compensating for departure of said vehicle from a path associated with said first line.

22. The monitor of Claim 2, further comprising:

a vehicle distance detector, said vehicle distance detector coupled to said roadway detector, said vehicle distance detector detecting a distance between the vehicle and a second vehicle in front of the vehicle, said vehicle distance

detector indicating said distance.

23. The monitor of Claim 22, further comprising:

a cruise control, said cruise control coupled to a throttle of said vehicle and said vehicle distance detector, said cruise control keeping or holding the vehicle at a certain minimum distance from said second vehicle.

24. The monitor of Claim 2, further comprising:

a wireless communication system, said wireless communication system coupled to said roadway detector, said wireless communication system providing wireless communications between the monitor and a wireless communications network.

25. The monitor of Claim 24, further comprising:

a global positioning system (GPS) receiver, said GPS receiver coupled to said wireless communication system; whereby

vehicle location information may be transmitted to said wireless communications network.

26. The monitor of Claim 24, further comprising:

a logbook recorder, said logbook recorder coupled to said wireless communication network, said logbook recorder recording data pertinent to

operation and maintenance of said vehicle, whereby

remote monitoring of the vehicle and its operational status may occur when data recorded in said logbook is transmitted to said wireless communications network and received by another.

27. The monitor of Claim 2 wherein said first camera is mounted within a side mirror housing.

28. The monitor of Claim 2 wherein the driver may zero the system to indicate a set position where the driver desires to be relative to said first line, and wherein said detector detects deviations from said set position.

29. The monitor of Claim 2 wherein said detector detects change from a previous position relative to said first line.

30. The monitor of Claim 2 wherein said detector detects non-movement of the steering wheel of said vehicle.

31. The monitor of Claim 2 whereby when the driver activates the turn signal of said vehicle, said detector detects and associates said vehicle's speed and position with the driver's changing of a traffic lane.

32. A monitor for a vehicle allowing oversight, detection, and recording of vehicular activity, comprising:

a first camera, said first camera directed towards a roadway upon which the vehicle is travelling, said first camera directed towards a first line painted on said roadway;

a second camera, said second camera directed towards said roadway and directed towards a second line painted on said roadway; said first line being on one side of the vehicle and said second line being on an opposite side of said vehicle, said vehicle travelling between said first and second lines;

first and second light sources, said first and second light sources respectively illuminating said roadway before said first and second cameras so that said roadway, including said first and second lines, are better detected by, respectively, said first and second cameras;

a roadway detector, said roadway detector coupled to said first and second cameras and receiving signals from said first and second cameras, said roadway detector detecting signals from said first camera indicating presence of said first line, said roadway detector detecting signals from said second camera indicating presence of said second line, so that coordinated detection of said first and second lines by said roadway detector indicates disposition of the vehicle between said first and second lines and proper travel of the vehicle along said roadway between said first and second lines;

said roadway detector determining centroids of signals received from

said first and second cameras, said centroids respectively indicating presence and relative location of said first and second lines;

said roadway detector coupled to a turn indicator, said roadway detector compensating for departure of said vehicle from a path associated with said first and second lines when said turn indicator is activated;

an indicator, said indicator coupled to said roadway detector, said indicator indicating disposition of said vehicle upon said roadway relative to said first and second lines, said indicator issuing a warning when the vehicle departs from a path defined by said first and second lines; and

a recorder, said recorder coupled to said first and second cameras and recording signals transmitted by said cameras, said recorder preserving said camera signals despite a collision, accident, or similar catastrophe; whereby

activity of the vehicle on said roadway is detected to aid a driver of the vehicle and recorded for future review and analysis.

33. The monitor of Claim 32, further comprising:

said first and second light sources transmitting light of a certain character;

said first and second cameras detecting light of said certain character; whereby

said light source may selectively illuminate said roadway for said first and second cameras by light of said certain character and allowing said first and

second cameras to specifically concentrate on said light of certain character and ignore light not having said certain character.

34. The monitor of Claim 32, further comprising:

a vehicle distance detector, said vehicle distance detector coupled to said roadway detector, said vehicle distance detector detecting a distance between the vehicle and a second vehicle in front of the vehicle, said vehicle distance detector indicating said distance.

35. The monitor of Claim 34, further comprising:

a cruise control, said cruise control coupled to a throttle of said vehicle and said vehicle distance detector, said cruise control keeping or holding the vehicle at a certain minimum distance from said second vehicle.

36. The monitor of Claim 32, further comprising:

a wireless communication system, said wireless communication system coupled to said roadway detector, said wireless communication system providing wireless communications between the monitor and a wireless communications network.

37. The monitor of Claim 36, further comprising:

a global positioning system (GPS) receiver, said GPS receiver coupled to

said wireless communication system; whereby

vehicle location information may be transmitted to said wireless communications network.

38. The monitor of Claim 37, further comprising:

a logbook recorder, said logbook recorder coupled to said wireless communication network, said logbook recorder recording data pertinent to operation and maintenance of said vehicle, whereby

remote monitoring of the vehicle and its operational status may occur when data recorded in said logbook is transmitted to said wireless communications network and received by another.

39. A method for testing potential driver ability, the steps comprising:

providing a circle;

tracing said circle, said circle traced by a driver; and

detecting departure from said circle by said tracing; whereby

manual dexterity and/or eye/hand coordination is indicated by said detection of departure of said tracing from said circle.

40. A method for testing potential driver ability, the steps comprising:

providing a moving target;

tracking said moving target, said tracking performed by a driver; and

detecting accuracy and speed of said tracking of said moving target; whereby

speed and accuracy of said tracking are determined by said detecting.

41. A method for rating and/or monitoring a driver's performance comprising:

providing a monitor for a vehicle allowing oversight, detection, and recording of vehicular activity, said monitor comprising:

a first camera, said first camera directed towards a roadway upon which the vehicle is traveling, said first camera directed towards a first line painted on said roadway;

a roadway detector, said roadway detector coupled to said first camera and receiving signals from said first camera, said roadway detector detecting signals from said first camera indicating presence of said first line, and

a recorder, said recorder coupled to said first camera and recording signals transmitted by said camera, said recorder preserving said camera signals; and

detecting and recording activity of the vehicle on said roadway for present and future review and analysis.

42. The method of Claim 41 wherein said detector detects driver deviations from a path relative to said first line.

43. The method of Claim 42 further comprising rating driver performance based on a record of accumulated deviations recorded over a time period.

44. The method of Claim 43 wherein said driver performance is rated by determining the root mean square value of said accumulated deviations.

45. The method of Claim 43 wherein said path is defined by a line having a set distance away from said first line.

46. The method of Claim 43 further comprising:

said monitor further having a second camera, said second camera directed towards said roadway and directed towards a second line painted on said roadway;

said first line being on one side of the vehicle and said second line being on an opposite side of said vehicle, said vehicle traveling between said first and second lines;

said second camera coupled to said roadway detector, said roadway detector receiving signals from said second camera and detecting signals from said second camera indicating presence of said second line; whereby

coordinated detection of said first and second lines by said roadway detector indicates disposition of the vehicle between said first and second lines

and proper travel of the vehicle along said roadway between said first and second lines; and

said path being a center path between said first and second lines.

47. The method of Claim 41 further comprising providing a station having a simulated road lane for calibrating the monitor, and testing the driver.

48. A method for testing a driver's performance comprising:

providing a random sound command, image projection, or a combination of both;

responding to said image, said responding performed by the driver; and

determining the speed and accuracy of said responding.

49. The method of Claim 48 wherein said sound command and image projection are provided while the driver is driving, said image projection being projected on the windshield of the vehicle wherein

alertness of the driver is determined by the speed and accuracy of said responding.

50. A method of monitoring a driver comprising:

recording the driver's brain wave patterns;

determining the character of said patterns when the driver is drowsy or falling asleep;

monitoring the driver's brain waves while driving;

comparing said patterns when the driver is drowsy or falling asleep to the brain waves while driving; and

determining when the driver is drowsy or falling asleep based on said comparing.